



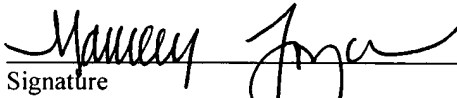
DOCKET NO.: H0498.70170US00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: George Allen et al.  
Serial No: 10/611,416  
Confirmation. No.: Not Yet Assigned  
Filed: July 1, 2003  
For: METHOD AND APPARATUS FOR MEASUREMENT  
OF SULFATE  
Examiner: Not Yet Assigned  
Art Unit: Not Yet Assigned

**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 31 day of October, 2003

  
\_\_\_\_\_  
Signature

Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

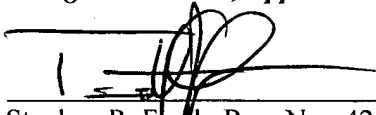
Transmitted herewith are the following documents:

- ☒ [X] Information Disclosure Statement
- ☒ [X] PTO Form 1449 with cited references
- ☒ [X] Return Receipt Postcard

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 720-3500, Boston, Massachusetts.

A check is not enclosed, as no fee is believed due. If a fee is required, the Commissioner is hereby authorized to charge Deposit Account No. 23/2825. A duplicate of this sheet is enclosed.

Respectfully submitted,  
*George Allen et al., Applicants*

By:   
\_\_\_\_\_  
Stephen R. Finch, Reg. No.: 42,534  
Timothy J. Oyer, Ph.D., Reg. No.: 36,628  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2211  
Telephone: (617)720-3500

Date: October 31, 2003  
xNDDx  
726039.1



DOCKET NO: H0498.70170US00

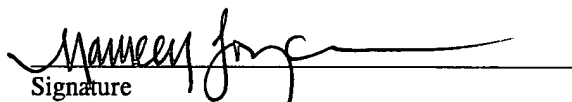
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: George Allen et al.  
Serial No: 10/611,416  
Confirmation No: Not Yet Assigned  
Filed: July 1, 2003  
For: METHOD AND APPARATUS FOR MEASUREMENT  
OF SULFATE  
Examiner: Not Yet Assigned  
Art Unit: Not Yet Assigned

---

**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 31 day of October, 2003.

  
Signature

---

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**STATEMENT FILED PURSUANT TO THE DUTY OF  
DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98**

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, the Applicant requests consideration of this Information Disclosure Statement.

**PART I: Compliance with 37 C.F.R. §1.97**

This Information Disclosure Statement has been filed before the mailing date of a first Office Action on the merits in the above-identified case. No fee or certification is required.

**PART II: Information Cited**

The Applicant hereby makes of record in the above-identified application the information listed on the attached form PTO-1449 (modified). The order of presentation of the references should not be construed as an indication of the importance of the references.

PART III: Remarks

Documents cited anywhere in the Information Disclosure Statement are enclosed unless otherwise indicated. It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
2. The enclosed form PTO-1449 be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;
3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

Serial No.: 10/611,416  
Confirmation No.: Not Yet Assigned

- 3 -

Art Unit: Not Yet Assigned

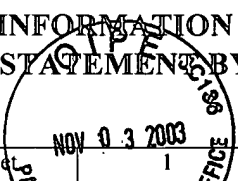
An early and favorable action is hereby requested.

Respectfully submitted,  
*George Allen et al., Applicants*

By: 

Stephen R. Finch, Reg. No. 42,534  
Timothy J. Oyer, Ph.D., Reg No. 36,628  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2211  
Telephone: (617) 720-3500

Docket No. H00498.70170.US  
Date: October 31, 2003  
**xNDDx**  
726041.1

FORM PTO-1449/A and B (Modified)		APPLICATION NO.: 10/611,416	ATTY. DOCKET NO.: H0498.70170US00
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		FILING DATE: July 1, 2003	CONFIRMATION NO.: Not Yet Assigned
		APPLICANT: George Allen et al.	
		GROUP ART UNIT: Not Yet Assigned	EXAMINER: Not Yet Assigned
Sheet 1 of 2			

#### U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication or of issue of Cited Document MM-DD-YYYY
		Number	Kind Code		
	A1	3,845,309	A	Helm et al.	10-29-1974
	A2	4,432,939	A	Watanabe et al.	02-21-1984
	A3	4,942,018		Munk	07-17-1990
	A4	5,597,480	A	Zhou	01-28-1997
	A5	5,716,852	A	Yager et al.	02-10-1998
	A6	5,957,579	A	Kopf-Sill et al.	09-28-1999
	A7	6,048,498	A	Kennedy	04-11-2000
	A8	6,063,589	A	Kellogg et al.	05-16-2000

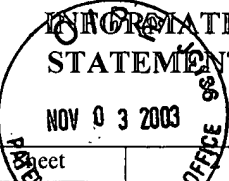
#### FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
		Office/Country	Number	Kind Code			
	B1	GB	575444	A1	Westinghouse Electric Corp.	09-24-1980	N
	B2	JP	084359	A	Toyota Central Res. Lab Inc.	03-28-2000	Abstract

#### OTHER ART — NON PATENT LITERATURE DOCUMENTS

Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
	C1	ROBERTS et al., "Analysis of Sulfur in Deposited Aerosol Particles by Vaporization and Flame Photometric Detection", (November 25, 1975), pp. 403-408.	
	C2	JAKLEVIC, et al., "Automatic Particulate Sulfur Measurements With a Dichotomous Sampler and On-Line X-ray Fluorescence Analysis", Vol. 15, No. 6, (June 1981), pp. 687-690.	
	C3	ALLEN, et al., "A New Method for Continuous Measurement of Sulfate in the Ambient Atmosphere", (October 18, 2001), pp. 1-14.	
	C4	BARDEN, EPA Project Summary: "Analysis System for Total Sulfuric Acid in Ambient Air-Development and Preliminary Evaluation", (May 1981), pp. 1-4.	
	C5	BUHR, et al., "Development of a Semi-Continuous Method for the Measurement of Nitric Acid Vapor and Particulate Nitrate and Sulfate", Vol. 29, No. 19, (March 24, 1995), pp. 2609-2624.	
	C6	CAMP, et al., "Intercomparison of Concentration Results From Fine Particle Sulfur Monitors", Vol. 16, No. 5, (May 22, 1981), pp. 911-916.	
	C7	COBOURN, et al., "Continuous <i>In Situ</i> Monitoring of Ambient Particulate Sulfur Using Flame Photometry and Thermal Analysis", Vol. 12, (October 5, 1977), pp. 89-98.	
	C8	D'OTTAVIO, et al., "Determination of Ambient Aerosol Sulfur Using a Continuous Flame Photometric Detection System II. The Measurement of Low-Level Sulfur Concentrations Under Varying Atmospheric Conditions", Vol. 15, (March 31, 1980), pp. 197-203.	
	C9	GARBER, et al., "Determination of Ambient Aerosol and Gaseous Sulfur Using a Continuous FPD III. Design and Characterization of a Monitor for Airborne Applications", Vol. 17, No. 7 (December 13, 1982), pp. 1381-1385.	

#### OTHER ART — NON PATENT LITERATURE DOCUMENTS

FORM PTO-1449/A and B (Modified)		APPLICATION NO.: 10/611,416	ATTY. DOCKET NO.: H00498.70170.US
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  		FILING DATE: July 1, 2003	CONFIRMATION NO.: Not Yet Assigned
		APPLICANT: George Allen et al.	
		GROUP ART UNIT: Not Yet Assigned	EXAMINER: Not Yet Assigned
Sheet	of	2	

Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
	C10	HOEK, et al., "Concentrations of Acidic Air Pollutants in the Netherlands", Vol. 30, No. 18 (January 12, 1996), pp. 3141-3150.	
	C11	HUNTZICKER, et al., "Continuous Measurement and Speciation of Sulfuer-Containing Aerosols by Flame Photometry", Vol. 12, (August 26, 1977), pp. 83-88.	
	C12	KAMHOLTZ, et al., "Quantitative Analysis of Molecular Interaction in a Microfluidic Channel: The T-Sensor", <i>Anal. Chem.</i> , Vol. 71, No. 23 (December 1, 1999), pp. 5340-5347.	
	C13	KEELER, et al., "Transported Acid Aerosols Measured in Southern Ontario", (May 21, 1990), Vol. 24A, No. 12, pp. 2935-2950	
	C14	KITTELSON, et al., "Total Sulfur Aerosol Concentration With an Electrostatically Pulsed Flame Photometric Detector System", Vol. 12, (September 7, 1977), pp. 105-111.	
	C15	LODGE, "Methods of Air Sampling and Analysis Third Edition", (1988), pp. 527-533.	
	C16	"Series 8400S Ambient Particulate Sulfate Monitor: Quantitative, Time-Resolved Measurement of Particulate Sulfate Contained in Ambient Fine Particulate Matter", Rupprecht & Patashnick Co., Inc. (July 2001), pp. 1-4.	
	C17	"Series 8400N Ambient Particulate Sulfate Monitor", (December 19, 2001), pp. 1-2.	
	C18	"Features Sheet Series 8400S Ambient Particulate Sulfate Monitor", (March 2001), pp. 1-2.	
	C19	"SLANINA et al., "Determination of Sulfuric Acid and Ammonium Sulfates by Means of a Computer-Controlled Thermodenuder System", <i>Anal. Chem.</i> Vol. 57, No. 9, (August 1985), pp. 1955-1960.	
	C20	"Comments on Determination of Sulfuric Acid and Ammonium Sulfates by Means of a Computer-Controlled Thermodenuder System", <i>Anal. Chem.</i> Vol. 58, (1986), pp. 653-654.	
	C21	"Thermo Environmental Instruments (TEI) Model 15C Gas Filter Correlation HCl Analyzer", (January 2, 2002), pp. 1-15.	
	C22	LEE, et al., "Aerosols: Research, Risk Assessment and Control Strategies", (May 19-25, 1985), pp. 105-120.	
	C23	SUH, et al., "Field Method Comparison for the Characterization of Acid Aerosols and Gases", Vol. 28, No. 18, (March 29, 1994), pp. 2981-2989.	
	C24	TANNER, et al., "Determination of Ambient Aerosol Sulfur Using a Continuous Flame Photometric Detection System I. Sampling System for Aerosol Sulfate and Sulfuric Acid", Vol. 14, (July 19, 1979), pp. 121-127.	
	C25	WEIGL, et al., "Microfluidics: Microfluidic Diffusion-Based Separation and Detection", <i>Science</i> , (August 28, 2000) 283 (5400):346, pp. 1-4.	
	C26	International Search Report dated January 24, 2003 for International Application No. PCT/US 02/00047.	
	C27	MADDALONE, ET AL., "Measurement of Sulfuric Acid Aerosol and Total Sulfate Content of Ambient Air", <i>Environmental Science &amp; Technology</i> , (February, 1996) pp. 162-168.	
	C28	Written Opinion dated March 13, 2003 for International Application No. PCT/US 02/00047.	

EXAMINER	DATE CONSIDERED
----------	-----------------

#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. \_\_, filed \_\_, and relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).

[NOTE - Must provide a copy of any patent, publication, other information listed, even if it was previously submitted to, or cited by, the U.S. Patent Office in an earlier application, unless the earlier application is identified by the IDS and is relied upon for an earlier filing date under 35 U.S.C. §120, and the copy was provided in the earlier application.]